

PATENT CLAIMS

1. A dosing device for drawing in and dispensing a free-flowing medium from a container having an inlet (60) and a discharge opening (62.1 to 62.4), characterized in that the inlet (60) and the discharge opening (62.1 to 62.4) are disposed separate from each other, a dosing and displacement chamber (61) being provided between them and the inlet (60) and/or discharge opening (62.1 to 62.4) being closable.

2. The dosing device as claimed in claim 1, characterized in that the inlet (60) and the dosing and displacement chamber (61) are disposed in a housing (3).

3. The dosing device as claimed in claim 1 or 2, characterized in that the inlet (60) opens out into the dosing chamber (61)..

4. The dosing device as claimed in claim 2 or 3, characterized in that connecting to the housing (3) and the inlet (60) is a suction tube (31), through which the free-flowing medium can be drawn into the dosing and displacement chamber (61).

5. The dosing device as claimed in at least one of claims 1 to 4, characterized in that the inlet (60) can be closed off by a ball valve (4).

6. The dosing device as claimed in claim 5, characterized in that the ball valve (4) is squeezed in between retaining ribs (6).

7. The dosing device as claimed in at least one of claims 2 to 6, characterized in that a screw fastening (30) is disposed on the housing (3).

8. The dosing device as claimed in claim 7, characterized in that on the screw fastening (30) a recess (63.1, 63.2) is provided for an air equalization.

9. The dosing device as claimed in claim 7 or 8, characterized in that a sealing element (5) is disposed in the screw fastening (30).

10. The dosing device as claimed in one of claims 7 to 9, characterized in that the screw fastening (30) has guide ribs (86) for guiding a plunger (2) which is inserted in the housing (3) and in which an actuating element (1.1) is inserted.

11. The dosing device as claimed in at least one of claims 2 to 9, characterized in that an actuating element (1.2 to 1.4) is inserted in the housing (3).

12. The dosing device as claimed in either of claims 10 or 11, characterized in that on the housing (3) there is provided at least one guide element (85) for guiding the motion of the plunger (2) or of the actuating element (1.2 to 1.4).

13. The dosing device as claimed in one of claims 10 to 12, characterized in that the discharge opening (62.1 to 62.4) is provided in the actuating element (1.1 to 1.4), a

riser (7.1 to 7.4) in the actuating element (1.1 to 1.4) cooperating with the discharge opening (62.1 to 62.4).

14. The dosing device as claimed in one of claims 10 to 13, characterized in that a nozzle (20.1) is rotatably disposed on or in the plunger (2).

15. The dosing device as claimed in one of claims 11 to 13, characterized in that a nozzle (20.2, 20.3) or a turning lever (19) is rotatably disposed on or in the actuating element (1.2 to 1.4).

16. The dosing device as claimed in claim 14 or 15, characterized in that the discharge opening (62.1, 62.2, 62.4) can be brought into connection with an outlet duct (8.1, 8.2, 24) in the nozzle (20.1, 20.2, 20.3).

17. The dosing device as claimed in claim 16, characterized in that, through rotation of the actuating element (1.1), the discharge opening (62.1) can be rotated out of its connection with the outlet duct (8.1) of the nozzle (20.1), the outlet duct (8.1) being closed off by the plunger (2).

18. The dosing device as claimed in claim 16, characterized in that, through rotation of the nozzle (20.2), the discharge opening (62.2) can be rotated out of its connection with the riser (7.2), the riser (7.2) being closed off by the nozzle (20.2).

19. The dosing device as claimed in claim 16, characterized in that, through rotation of the turning lever

(19), the discharge opening (62.3) can be rotated out of its connection with the riser (7.3), the riser (7.3) being closed off by the turning lever (19).

20. The dosing device as claimed in claim 16, characterized in that, through rotation of a cap (22) of the nozzle (20.3), the discharge opening (62.4) can be rotated out of its connection with the riser (7.4), the riser (7.4) being closed off by the cap (22).

21. The dosing device as claimed in at least one of claims 10 to 20, characterized in that on the outer side (11) of the plunger (2) or of the actuating element (1.2 to 1.4) a scale (70) is provided, to indicate a dose quantity.

22. The dosing device as claimed in at least one of claims 10 to 21, characterized in that on the plunger (2) a plunger lip (81) is provided, and on the actuating element (1.1) a sealing and snap lip (80) is provided, to prevent an intake of air.

23. The dosing device as claimed in at least one of claims 10 to 22, characterized in that a sealing groove (90) is provided between the actuating element (1.1) and the plunger (2) for sealing purposes.

24. The dosing device as claimed in at least one of claims 10 to 23, characterized in that on an underside (13) of the plunger (2) there is provided at least one sealing cam (64), which can be brought into engagement with the recess (63.1) on the screw fastening (30).

25. The dosing device as claimed in at least one of claims 11 to 24, characterized in that the actuating elements (1.2 to 1.4) are provided with a sealing ring (16) with respect to a wall (17) of the dosing and displacement chamber (61).

26. The dosing device as claimed in at least one of claims 11 to 25, characterized in that the actuating elements (1.2 to 1.3) are provided with an annular rib (18), which can be brought into engagement with the recess (63.2) in the screw fastening (30).

27. The dosing device as claimed in at least one of claims 15 to 26, characterized in that the turning lever (19) is secured in the actuating element (1.3) by means of a ring (33).

28. The dosing device as claimed in at least one of claims 20 to 27, characterized in that the cap (22) can be slipped onto an arm (21) of the actuating element (1.4).

29. The dosing device as claimed in at least one of claims 20 to 28, characterized in that the cap (22) is engaged by means of a ring (26) in a corresponding annular groove (27) in a wall (28) of a duct (23) of the actuating element (1.4).

30. The dosing device as claimed in claim 28 or 29, characterized in that the cap (22) has a duct (24), the internal diameter ( $d_1$ ) of which is greater than a diameter ( $d_2$ ) of the arm (21).

31. The dosing device as claimed in at least one of claims 20 to 30, characterized in that the cap (22) is provided with wing-like elements (32).

32. The dosing device as claimed in at least one of claims 10 to 31, characterized in that the plunger (2) is provided with indicators (82.1, 83.1) for a "CLOSED" setting and an "OPEN" setting.

33. The dosing device as claimed in at least one of claims 15 to 32, characterized in that the nozzle (20.2) is provided with the indicators (82.2, 83.2) for a "CLOSED" setting and an "OPEN" setting.

34. The dosing device as claimed in at least one of claims 20 to 33, characterized in that the cap (22) is provided with the indicators (82.4, 83.4) for a "CLOSED" setting and an "OPEN" setting.

35. The dosing device as claimed in at least one of claims 10 to 34, characterized in that the actuating element (1.1 to 1.4) has a recess (9) for the reception of a product.